

A New Anophthalmic *Trechiana* (Coleoptera, Trechinae) from the Upper Hypogean Zone of Central Taiwan¹⁾

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Abstract A new anophthalmic species of the trechine genus *Trechiana* is described from the upper hypogean zone of a high mountain in central Taiwan under the name of *T. longissimus*. It belongs to the *hamatus* group and is readily recognized on the peculiar shape of its prothorax and the absence of the first dorsal pore on the 3rd elytral stria. A key is provided to the Taiwanese species of the genus.

In this paper, I am going to describe a new anophthalmic species of *Trechiana* from a high mountain of Taiwan once again. Like the three anophthalmic species previously known, it also belongs to the group of *T. hamatus*, but is readily distinguished from them by its peculiar facies, above all by the characteristic configuration of its prothorax. It is highly probable that other species of the same lineage still remain undiscovered on the high mountains of the island, but they can be brought to light only by exhausting efforts because of considerable difficulty in locating their upper hypogean habitats on very steep slopes, on which favourable colluvia cannot be deposited along rushing torrents.

The abbreviations used herein are the same as those explained in previous papers of mine.

Before going further, I wish to express my hearty thanks to Professor Yau-I CHU and Mr. Chiun-Cheng KO for their kind collaboration, and to Professor Yoshiaki NISHIKAWA, Ms. Akiko SAITO and Mr. Kun Fu SHIH for offering efficacious aids to my researches in the field.

Trechiana (s. str.) *longissimus* S. UENO, sp. nov.

(Figs. 1–3)

Length: 5.20–5.25 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *hamatus* group and readily recognized on its elongate subparallel-sided facies, with large prothorax whose basal part is ample and has acutely produced hind angles, and its 3rd elytral stria bearing only two setiferous dorsal pores.

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Larger than the other species of the same group and somewhat darker in coloration, though the palpi, apical halves of antennae, ventral side of hind body, and legs are yellowish brown.

Head relatively large and rather square, hardly narrowed in front, and hardly convex laterad at middle, with shallow neck constriction, but otherwise similar to those in the other species; antennae long and slender, nearly reaching apical fourth of elytra.

Prothorax obviously larger than in the other species, less contracted behind, less convex on dorsum, and with large projecting hind angles; pronotum wider than head, as wide as or slightly wider than long, widest at two-thirds from base, and much more gradually narrowed towards base than towards apex; PW/HW 1.36 in the holotype (H), 1.41 in the paratype (P), PW/PL 1.00 in H, 1.09 in P, PW/PA 1.48 in H, 1.53 in P, PW/PB 1.24 in H, 1.33 in P; dorsum gently convex, with sculptures as in the other species though the basal transverse impression is deeper and smooth and the basal foveae are larger and deeper; sides narrowly reflexed, gently arcuate even in front, more feebly so behind middle, deeply sinuate at about basal eighth, and then divergent towards hind angles, which are large, acute and postero-laterally produced; apex almost straight at middle, evidently narrower than base, PB/PA 1.19 in H, 1.15 in P, with front angles obtuse and hardly advanced; base widely emarginate; postangular carinae distinct; microsculpture largely obliterated, though consisting of fine transverse lines.

Elytra long and narrow, evidently longer than in the other species, widest at about four-sevenths from bases, and more gradually narrowed towards bases than towards apices, with the sides very slightly emarginate behind shoulders, very feebly arcuate at middle, and gently so even in preapical parts; EW/PW 1.61 in H, 1.54 in P, EL/EW 1.83 in H, 1.74 in P; shoulders distinct though very obtuse, with prehumeral borders oblique and slightly arcuate; apices rather narrowly and almost conjointly rounded, though leaving a narrow re-entrant angle at suture, preapical emargination very slight; disc widely depressed inside stria 5, especially in proximal two-sevenths; microsculpture formed by fine transverse lines, though largely degenerated; striae entire, fairly deep and smooth on the disc, shallower and indistinctly crenulate at the side, stria 8 not particularly deepened in apical half; scutellar striole clearly impressed, fairly long; apical striole short but deep, moderately arcuate, and joining or nearly joining stria 5; intervals slightly convex on the disc before middle; apical carina short and obtuse; chaetotaxy basically similar to that in the other species, but unique in lacking the proximal one of setiferous dorsal pores on the 3rd stria, that is, the internal series consists of only two posterior pores.

Ventral surface and legs as in the other species, though the legs are relatively long.

Male genital organ relatively small, though robust and heavily sclerotized, markedly differing in configuration from those of the other species. Aedeagus short and robust, about three-tenths as long as elytra, hardly arcuate at middle though the dorsal margin is strongly rounded at middle in profile, with small basal part and long apical

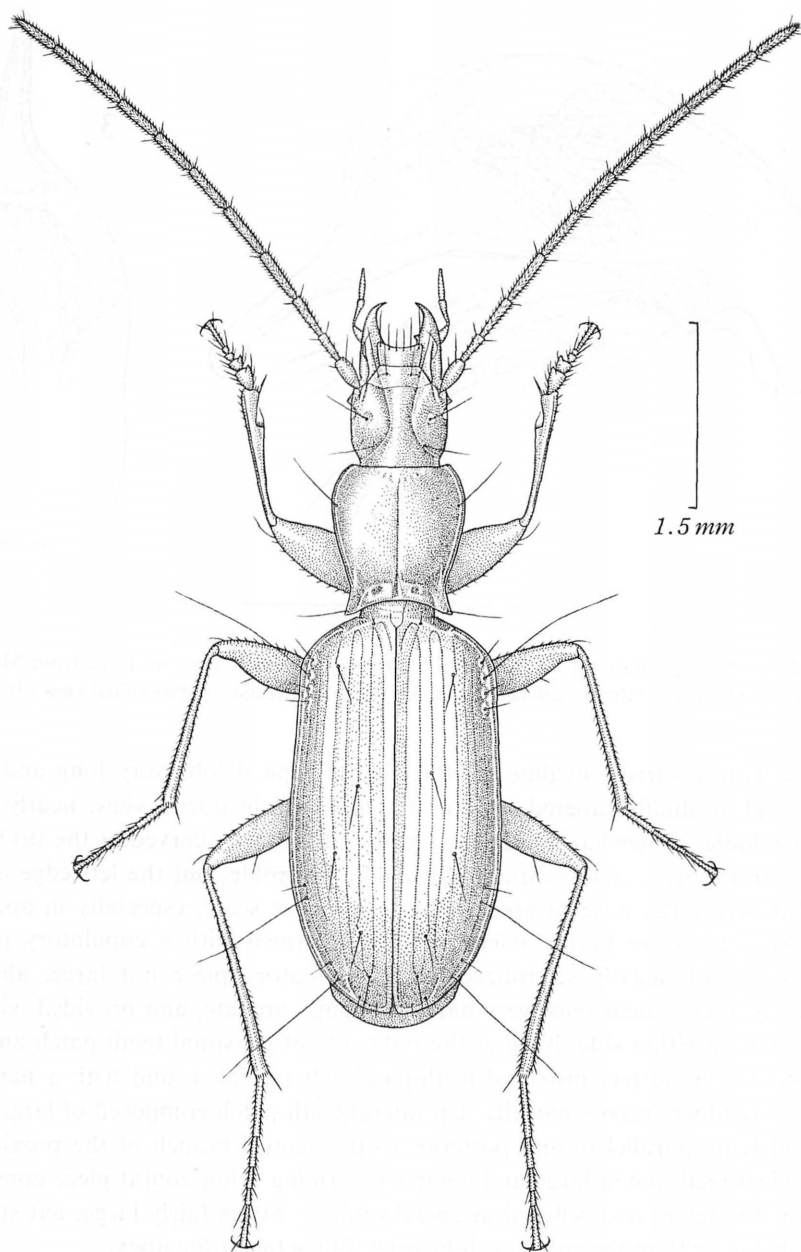
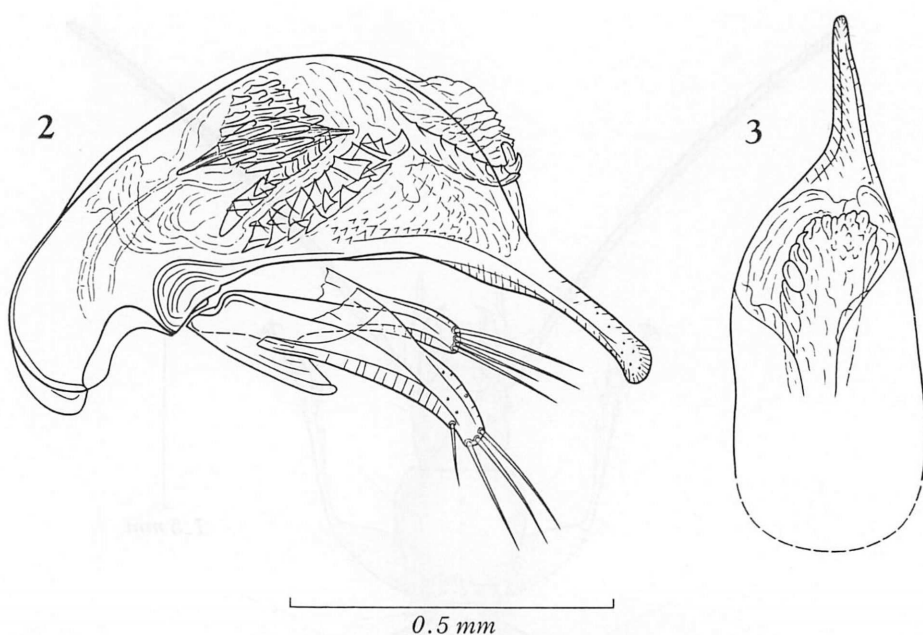


Fig. 1. *Trechiana* (s. str.) *longissimus* S. UENO, sp. nov., ♂, from Mt. Cho-she-ta Shan.

lobe, the latter of which is abaxial to the left and ventro-apically produced; right aedeagal wall expanded at the side of apical orifice, which is evidently asymmetrical; basal part hardly bent ventrad, deeply emarginate at the sides of basal orifice, and



Figs. 2-3. Male genitalia of *Trechiamma* (s. str.) *longissimus* S. UENO, sp. nov., from Mt. Cho-she-ta Shan; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

provided with a narrow hyaline sagittal aileron; apical lobe very long and narrow, oblique and gradually tapered towards the blunt tip in dorsal view, nearly parallel-sided at middle, somewhat dilated, rounded and ventrally curved at the tip in lateral view; ventral margin nearly straight at middle in profile, but the left edge is slightly expanded before the base of apical lobe. Inner sac scaly, especially in apical part, though the scales are hardly sclerotized, being armed with a copulatory piece and three patches of heavily sclerotized teeth; copulatory piece not large, about two-sevenths as long as aedeagus, very narrow, slightly arcuate, and provided with a narrow lamella on either side, lying at the right side of proximal teeth-patch and almost concealed by the latter; proximal teeth-patch left lateral, round with a narrow row of teeth extending antero-ventrally; left lateral teeth-patch composed of large lamellar teeth and lying parallel to and posterior to the ventral branch of the proximal one; dorso-apical teeth-patch large and compact, forming a horizontal piece composed of amalgamated teeth, and reflexed at apical orifice. Styles fairly large, left style being obviously larger than the right, each bearing four setae at the apex.

Female unknown.

Type series. Holotype: ♂, 19-V-1991, S. UENO leg. Paratype: 1 ♂, same date, Y. NISHIKAWA leg. Both deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Cho-she-ta Shan, 2,150 m in altitude at the side of Wu-chieh

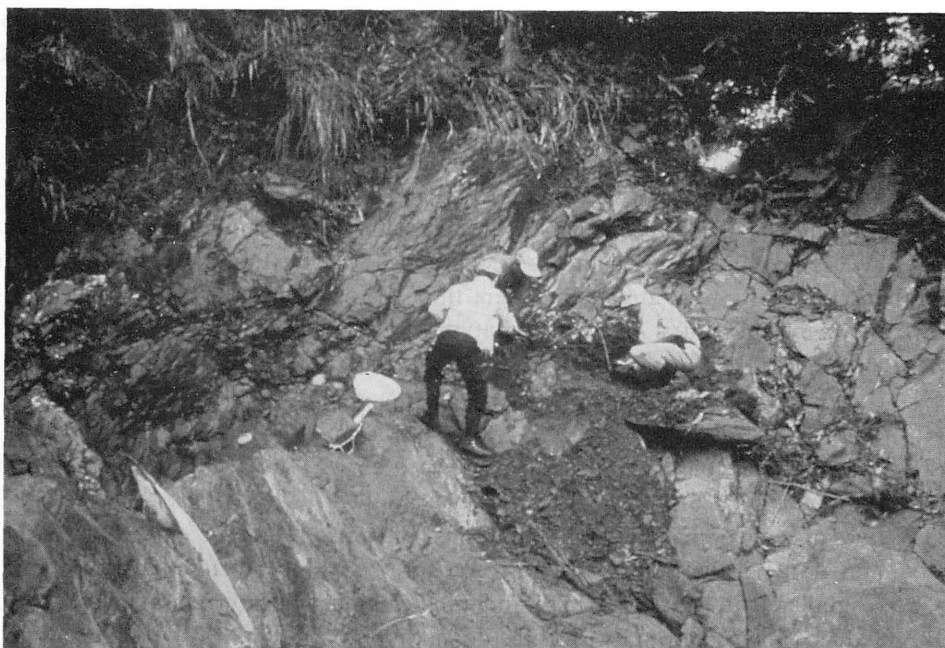


Fig. 4. Habitat of *Trechiana* (s. str.) *longissimus* S. UENO, sp. nov., on Mt. Cho-she-ta Shan (at an elevation of 2,150 m).
Photo Akiko SAITO.

Lin-tao on the NW slope, in Jen-ai Hsiang of Nan-t'ou Hsien, central Taiwan.

Notes. It is most unexpected that a species occurring on a mountain lying between the localities of the two externally similar species, *T. chui* and *T. cuancao*, is considerably different from them in the shape of prothorax and elytra. In fact, previously known species of the *hamatus* group are almost identical with one another in external features, whereas *T. longissimus* can be readily recognized on external peculiarities alone. It is true that Mt. Cho-she-ta Shan lies near the western end of a branch ridge of the Chung-yang Mountain Range, on the main part of which lies Mt. Neng-kao-pei-feng, the type locality of *T. chui*, but in a bee-line, it is only 28.5 km distant to the southwest from the latter. On the other hand, Kuan-kao, the type locality of *T. cuancao*, is about 67 km distant to the south-southwest from Mt. Neng-kao-pei-feng and about 40 km distant in a similar direction even from Mt. Cho-she-ta Shan, and yet appreciable external differentiation of anophthalmic *Trechiana* has not taken place between the former two localities. It is difficult to account for this dilemma at the present moment, since our knowledge of Taiwanese species of these trechine beetles is still too poor to advance convincing argument. As was pointed out in the introduction of this paper, however, it may not be easy to clarify the upper hypogean fauna of Taiwan to a satisfactory state, because many high mountains on that island are very difficult of access for various reasons.

Mt. Cho-she-ta Shan (3,369 m in height) is situated at the centre of Taiwan, but has never been visited by experienced entomologists before. It is very steep as is usual for Taiwanese high mountains, and is mostly covered with almost impassable bush. A trail, called Wu-chieh Lin-tao, runs traversing the northern slope of the mountain at an altitude of 2,150–2,250 m, crossing several gullies near their sources. The habitat of *T. longissimus* was found in one of them (Fig. 4). It was a rather thin colluvium only 20–30 cm in thickness deposited at the side of a gutter-shaped gully of shale. We removed all the soil and rock debris of the colluvium and carefully examined them, but all we were able to find were the two specimens of *Trechiana* recorded above and a specimen of a *Jujiroa*-like platynine.

Key to the Taiwanese Species of *Trechiana*

- 1 (2) Eyes present; colour dark reddish brown to brown; fully winged or brachypterous; length 4.65–6.10 mm [*alatus* group].....*T. alatus* S. UÉNO, 1979.
- 2 (1) Eyes absent; depigmented and apterous [*hamatus* group].
- 3 (8) Body less parallel-sided, with narrower fore body and shorter elytra; prothorax smaller, with narrower base and smaller hind angles which are hardly produced; elytral stria 3 with three dorsal pores.
- 4 (7) Aedeagal apical lobe not forming a large hook curved dorsad; inner sac with larger proximal teeth-patch.
- 5 (6) Aedeagal apical lobe compressed, with the tip blunt; copulatory piece narrower and spatulate in basal half; proximal teeth-patch narrowly extending posteriad along the left ventral side; length 4.65–5.10 mm; [Kuan-kao on the Yü-shan Mountains].....*T. cuancao* S. UÉNO, 1991.
- 6 (5) Aedeagal apical lobe minutely hooked dorsad at the tip; copulatory piece subtriangular, much broader in basal half; proximal teeth-patch without ventral extension; length 5.00 mm; [Mt. Neng-kao-pei-feng].....
.....*T. chui* S. UÉNO, 1990.
- 7 (4) Aedeagal apical lobe forming a large hook curved dorsad and acute at the tip; inner sac with smaller proximal teeth-patch; length 4.70–4.80 mm; [Mt. Neng-kao-pei-feng].....*T. hamatus* S. UÉNO, 1990.
- 8 (3) Body more parallel-sided, with broader fore body and longer elytra; prothorax larger, with wider base and larger hind angles which are postero-laterally produced; elytral stria 3 with only two posterior dorsal pores; length 5.20–5.25 mm; [Mt. Cho-she-ta Shan]*T. longissimus* S. UÉNO, sp. nov.

要 約

上野俊一：台湾中央部の地下浅層にすむナガチビゴミムシ属の1 盲目種。——台湾中央部，卓社大山亜高山帯の地下浅層から，ナガチビゴミムシ属の1 盲目種を記載し，これに *Trechiana* (s. str.) *longissimus* という新名を与えた。この新種は *hamatus* 種群に属するが，前胸背板の特異な形状と上

翅第3条の第1孔点を欠くこととによって、既知の3種から容易に識別できる。また、雄交尾器の構造も特異である。

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On the Larvae of the Lucanid Beetle, *Macrodercas rectus* (Coleoptera, Lucanidae), Collected from Fallen Mōsō Bamboos

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Larvae of most lucanid beetles (Coleoptera, Lucanidae) feed on rotten wood of various kinds of hardwoods (GRAVELY, 1916, 1919; NOMURA, 1963; ELTON, 1966; HAYASHI, 1986; OKAJIMA & YAMAGUCHI, 1988; YAMAGUCHI, 1989). However, several species are known to feed on other foods: rotten softwoods, humus near or beneath rotten wood, soil on forest ground, and rhizomes of pampas grass or sod (BORROR & WHITE, 1970; SAKAINO, 1982; KUBOTA, 1986; ARAYA, 1987; anonymous, 1987; SHIRAIISHI, 1987; NAKABAYASHI, 1987; OKAJIMA & YAMAGUCHI, 1988; YAMAGUCHI, 1989; FUJITA, 1990).

Macrodercas rectus is one of the most abundant lucanid species in Japan, and its larvae live in many kinds of decayed hardwoods (NOMURA, 1963; anonymous, 1987; OKAJIMA & YAMAGUCHI, 1988; YAMAGUCHI, 1989). On a small hill in Chita City, on the peninsular part of Aichi Prefecture, Central Japan, I collected in 1986 two 3rd (final) instar larvae of *M. rectus* from two fallen Mōsō bamboos (*Phyllostachys pubescens*), whose decay did not progress much. The larvae dwelled in tunnels with bamboo frass excavated into the cortex